

# **EXHIBIT A**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA  
SAN FRANCISCO DIVISION**

_____	)	
ORACLE AMERICA, INC.	)	
	)	
Plaintiff,	)	
	)	
v.	)	Case No. CV-03561-WHA
	)	
GOOGLE, INC.	)	
	)	
Defendant.	)	
_____	)	

**EXPERT REPORT OF  
PROFESSOR JAMES R. KEARL  
(CORRECTED March 21, 2016)**

March 18, 2016

## Table of Contents

<b>1. Qualifications .....</b>	<b>3</b>
<b>2. Assignment .....</b>	<b>3</b>
<b>3. Materials Relied Upon .....</b>	<b>5</b>
<b>4. Summary of Opinions .....</b>	<b>5</b>
<b>5. Foundational Issues .....</b>	<b>6</b>
<b>6. Treatment of Technical Issues .....</b>	<b>8</b>
<b>7. Background .....</b>	<b>9</b>
<b>8. Disgorgement: Non-infringing Alternatives and Apportionment .....</b>	<b>18</b>
8.1. Next Best Non-Infringing Alternatives .....	22
8.1.1 Next Best Non-Infringing Alternative #1: OpenJDK .....	23
8.1.2 Next Best Non-Infringing Alternative #2: Train Developers in Alternative Programming Language .....	24
8.1.3 Next Best Non-Infringing Alternative #3: Subsidize App Development in Alternative Programming Language .....	28
8.1.4 Next Best Non-Infringing Alternative #4: Develop Android in Alternative Programming Language, with (Possibly) Fewer Apps Available and Lower Market Share 30 .....	
8.1.5 Next Best Non-Infringing Alternative #5: Do Not Develop Android at All .....	40
<b>9. Lost Profits .....</b>	<b>41</b>
9.1. Mr. Malackowski's Lost Profits Model .....	41
9.2. Dr. Leonard's Objections .....	42
9.3. Which Java ME Forecast is Most Appropriate .....	42
9.4. Java ME Lost Profits Not Related to Android Volumes .....	43
9.5. Java ME does not Compete with Android .....	44
9.6. Dr. Leonard's Alternative Damages Model .....	45
9.7. An Alternative Lost Profits Model Controlling for Price Erosion .....	49
9.8. Discounting .....	49
<b>10. Other Issues .....</b>	<b>50</b>

March 18, 2016

Charles River Associates

10.1.	Leonard's App Introduction Lag Analysis .....	50
10.2.	Apportionment.....	50
10.3.	The 2006 Sun/Google Negotiation .....	52

March 18, 2016

Charles River Associates

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## 1. Qualifications

1. I am currently the A.O. Smoot Professor of Economics at Brigham Young University (BYU) and a Senior Consultant with Charles River Associates, a firm that provides expert analysis, litigation support, and business consulting in sophisticated matters involving economics and finance. I received my Ph.D. in Economics from the Massachusetts Institute of Technology in 1975 and completed postdoctoral studies in law and economics at the Harvard Law School in 1979. I have been a member of the Economics Department at BYU since 1975. Prior to that time I was a teaching fellow at Harvard University. From 1978 to 1983, I held a joint appointment in the Economics Department and J. Reuben Clark Law School at BYU. Over the past 30 years, I have taught courses in the Principles of Economics, Microeconomic Theory, Applied Microeconomics, Industrial Organization, Economics of Antitrust and Regulation, Applied Welfare Economics, International Trade, International Trade Policy, and Law and Economics. I have also team taught courses at BYU's J. Reuben Clark Law School in Antitrust Law, Regulatory and Administrative Law, and International Trade Law and Regulation. In addition, I have lectured for the U.S. Government in a number of countries on the Economics of U.S. Trade Policy, Law and Economics, and the Economics of U.S. Antitrust Laws. I have also taught courses on the same topics at the Republic of China's Professional Training Center and at its Land Development Institute. My curriculum vita is attached to this report as Appendix A. A list of testimony provided during the past four years is attached to this report as Appendix B. My hourly billing rate for this assignment is \$780 per hour.

## 2. Assignment

2. I was initially retained by the Court, per Judge William Alsup's order of September 9, 2011, to a) independently critique the damages reports submitted by each party, b) provide my assessment of any or all issues raised or presented in the damages reports of the parties,

March 18, 2016

Charles River Associates

15. I understand that a copyright owner alleging infringement can claim as damages its actual losses, as well as (to the extent not taken into account in an award for actual losses) the infringer's wrongful profits. In this matter, Oracle claims damages based on the infringer's wrongful profits (so called "disgorgement") and actual losses related to decreased demand for its Java ME product.
16. In responding to Mr. Malackowski's opinions regarding disgorgement damages, Dr. Leonard relies in part on analyses of the next-best non-infringing alternatives available to Google, and the profits Google would have made under those alternatives.<sup>5</sup> Mr. Malackowski argues that consideration of non-infringing alternatives is improper when calculating disgorgement damages and cites to an order from the Court stating that non-infringing alternatives have nothing to do with disgorgement.<sup>6</sup> However, Mr. Malackowski apparently does believe that the wrongful profits subject to disgorgement need to be apportioned based on the "relative value" of the copyrighted material to the overall work.<sup>7</sup>
17. As discussed below, there does not appear to be a clear distinction between considering non-infringing alternatives and apportioning wrongful profits based on relative value of the copyrighted material to the overall work. Thus, I present analysis of disgorgement damages below based on the various non-infringing alternatives posited by Dr. Leonard.<sup>8</sup> Obviously,

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<sup>5</sup> Expert Report of Dr. Gregory K. Leonard, Corrected March 10, 2016, paras. 174-196.

<sup>6</sup> Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), paras. 14 and 30-37. Mr. Malackowski also uses the term "counterfactuals" to denote the consideration of non-infringing alternatives.

<sup>7</sup> Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), para. 269.

<sup>8</sup> Oracle's other economic expert, Professor Jaffe, appears to agree with me, as stated in his (corrected) February 8, 2016 report, para. 440: "As an economist, I think about the decisions companies make in light of the alternatives they are considering."

March 18, 2016

Charles River Associates

should the Court instruct that this approach is legally impermissible, then I would remove this portion of the report.<sup>9</sup>

## 6. Treatment of Technical Issues

18. Speaking broadly, Oracle asserts that the infringement of the 37 Java APIs led to a large increase in the number of applications available on the Android platform, and that this increase in the number of available apps was critical (indeed, essential) to the success of Android.<sup>10</sup> Google asserts that the use of the 37 Java APIs did not materially increase the number of apps available for Android, and that any increase in the number of available apps was not material in the market acceptance of Android.<sup>11</sup> While an economist does bring expertise to the question of whether greater app availability is important to the market acceptance of smartphone platforms, economists do not have unique expertise in the question of whether the use of the 37 Java APIs led to an increased number of available apps for Android.

19. There appears to be good evidence that consumers and Original Equipment Manufacturers (“OEMs”), as well as Google, placed value on the number of applications available on the

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<sup>9</sup> In the initial phase of this case, I had the advantage that the Court had ruled on Daubert and like motions before I submitted my report, which narrowed my opinions to matters still before the Court. Because of the accelerated schedule in this phase, my report will be submitted before Daubert and like challenges and it may be that matters in other expert reports on which I opine in this report will be excluded by the Court. In such cases, I would expect that sections or paragraphs that correspond to specific exclusions will be dropped from this version of my report.

<sup>10</sup> Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), para. 162: “Android would need hundreds of thousands of apps available to be attractive to developers and consumers.”

<sup>11</sup> Oracle also asserts that use of the 37 Java APIs enabled Google to bring Android to the market faster than would have been otherwise possible. Google and Dr. Leonard dispute this and Dr. Leonard, in particular, appears to be of the opinion that Google could have based Android on a different programming language (C++ for example) with little, if any, effect on when Android became available. This is essentially a factual dispute, but neither Mr. Malackowski nor Dr. Leonard estimate damages assuming that Android would have been delayed But-For the use of the 37 Java APIs.

March 18, 2016

Charles River Associates

Malackowski's approach.<sup>43</sup> In his deposition, Mr. Malackowski reiterated his belief that he has correctly and fully accounted for Android Search Ad TAC.<sup>44</sup>

28. Upon reviewing available materials, including the deposition of Jonathan Gold that Mr. Malackowski cites, it would appear that Mr. Malackowski may have been mistaken.<sup>45</sup> As this is a fact issue, I will defer to the Court and jury to decide. For the purposes of my analyses in this report, however, I will use Dr. Leonard's approach. Should the jury decide that Mr. Malackowski is correct that Android Search Ad Traffic Acquisition Costs are recorded in the "Apps" and "Digital Content" cost line items of the Android P&Ls, I will adjust my analysis to reflect this.

29. Exhibit 1 provides a comparison of Dr. Leonard's and Mr. Malackowski's TAC estimation approaches. As this exhibit illustrates, the difference between Dr. Leonard and Mr. Malackowski, which is almost solely due to this factual dispute about where Android Search Ad TAC are booked, will substantially affect the estimate of Android profits.

30. In early 2016, Google produced a document titled "Google Search Distribution Agreements with Non-Android Mobile Operating System Partners".<sup>46</sup> This document reports Search ad

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<sup>43</sup> Deposition of Dr. Gregory K. Leonard, March 11, 2016, pp. 214-215.

<sup>44</sup> Deposition of James E. Malackowski, March 16, 2016, pp. 162-184.

<sup>45</sup> Deposition of Jonathan Gold, December 11, 2015, pp. 185-186. Note that Mr. Gold is answering questions based on the May 2015, "Introduction to Android" presentation (GOOG-00130338) rather than the Android P&Ls. The specific statement referenced in the question appears to be speaking of all Android Traffic Acquisition Costs in general: "In 2015, we expect to pay \$1.8B+ to our Carrier, OEM, and Retail partners through rev-share agreements, channel incentives, and rent" (GOOG-00130338 at 340; Deposition of Jonathan Gold, December 11, 2015, p. 185). Earlier in his deposition, Mr. Gold answers questions about the Android P&Ls. He appears to state that Distribution Partner TAC is not included in the "Apps" and "Digital Cost" line items of the Android P&Ls (Deposition of Jonathan Gold, December 11, 2015, pp. 71-72) and, relatedly, that TAC for Distribution Partners is included in the general Google AdWords TAC, which Dr. Leonard uses in his approximation of Android Search TAC (Deposition of Jonathan Gold, December 11, 2015, pp. 149-150; Expert Report of Dr. Gregory K. Leonard, February 8, 2016, Exhibit 1d).

<sup>46</sup> Case No. CV 10-03561 WHA, Response to Docket No. 1436, "Google Search Distribution Agreements with Non-Android Mobile Operating System Partners".



March 18, 2016

Charles River Associates

incremental for Display ads. That is, Android has to pay more to generate Search ad revenue on non-Android devices compared to Android devices, but this does not appear to be true for AdSense or Display ads, which reside on third-party websites or applications.

33. I assume for my analysis and opinions that Google pays a lower TAC on Search ads for Android phones than it does for Search ads viewed on other phone platforms (such as the iPhone). For calculations that rely on the TAC difference between Android phones and other phones, I adopt the TAC cost saving percentage of 21% from GOOG-00130338 – 346, at 343.<sup>52</sup> I note that this document is from 2015. The relative TAC on Android versus other platforms may have varied over time. However, since I do not have data on relative TAC for other periods, I assume this difference applies across all years.

## 8. Disgorgement: Non-infringing Alternatives and Apportionment

34. Mr. Malackowski and Dr. Leonard agree that disgorgement damages are “any profits of the infringer that are attributable to the infringement and are not taken into account in computing actual damages.”<sup>53</sup>

35. Dr. Leonard argues that in calculating disgorgement damages, it is necessary to determine the infringer’s next-best non-infringing alternative, and to compare the profits the infringer actually made (due to the infringement) with the profits the infringer would have made had

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<sup>52</sup> The document states that the TAC on iOS is 36% while the TAC on Android is 15%, a difference of 21%. The document also reports that the average annual margin on an Android device is \$8.41, and the TAC savings (relative to an iOS device) is \$1.67.  $\$1.67 / \$8.41 = 19.9\%$ .

<sup>53</sup> Both citing 17 U.S.C. §504(b). See Expert Report of Dr. Gregory K. Leonard, Corrected March 10, 2016, para. 11 and Expert Report of James E. Malackowski, January 8, 2016 (Corrected), para. 15. Dr. Leonard sometimes refers to disgorgement damages as “unjust enrichment,” a term to which Mr. Malackowski objects (see Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), pp. 137-139).

it employed its next-best non-infringing alternative.<sup>54</sup> Mr. Malackowski argues that consideration of non-infringing alternatives has no place in a disgorgement calculation, and cites an order of this Court to the same effect.<sup>55</sup> On the other hand, Mr. Malackowski does employ an “apportionment” of his calculation of Android profits, and states that the apportionment should be based on the “relative value” of the copyrighted work to the value contributed by the rest of the work.<sup>56</sup> The apportionment Mr. Malackowski performs is similar to the process of subtracting But-For profits under the assumption that, absent infringement, Google would not have pursued the Android project at all, which Mr. Malackowski appears to believe was Google’s next-best non-infringing alternative. Thus, Mr. Malackowski in effect does consider a non-infringing alternative, albeit a specific alternative: Google not pursuing Android at all. I do not have a position on the legal issue of whether non-infringing alternatives can be considered in a disgorgement analysis, and if so, which alternatives are allowed to be considered. However, as an economist it seems sensible to allow (indeed, to require) consideration of the next best non-infringing alternative. If the measure of disgorgement damages is the profits attributable to the infringement, then this naturally seems to call for an apportionment of the total profits of the infringing product between those that are due to the infringement and those that are due to other factors. And this

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<sup>54</sup> Four of the five disgorgement alternatives Dr. Leonard offers rely on consideration of a non-infringing alternative. (Deposition of Dr. Gregory K. Leonard, March 11, 2016, pp. 48-49.) See also Expert Report of Dr. Gregory K. Leonard, Corrected March 10, 2016, para. 20: “In the context of this case, assessing whether there is a causal nexus between Google’s use of the SSO and declaring code of the 37 API packages (“the allegedly infringing material”) and a particular revenue stream first requires an analysis of Google’s best course of action had it not used the allegedly infringing material. Then, the counterfactual revenue stream and profits that Google would have earned taking its best course of action can be analyzed to determine the extent of the causal nexus, if any.”

<sup>55</sup> Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), para. 139 and Doc. 632 “Order Granting in Part and Denying in Part Motion to Exclude Portions of the Expert Reports of Gregory K. Leonard and Alan J. Cox”, November 28, 2011, pp. 6-7.

<sup>56</sup> Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), paras. 269-305.

apportionment seems to naturally call for a But-For analysis and a specification of a non-infringing alternative.

36. A starting point for all of Mr. Malackowski's and Dr. Leonard's disgorgement analyses is a calculation of the revenues that Google has made on Android devices and the costs that Google has incurred in generating these revenues. Both Dr. Leonard's and Mr. Malackowski's report exhibits include financials for valuing Android's revenues, costs, and profits, and for much of the financial data they find consensus.<sup>57</sup> They differ in opinion on 1) the amount of TAC related to search ads on Android, 2) Android G&A Expenses, and 3) Incremental Search and Advertising Expenses.<sup>58</sup> See Exhibit 2 for a comparison of Dr. Leonard's and Mr. Malackowski's Android financial performance. For my report, I adopt Dr. Leonard's estimates of TAC, Android G&A, and Incremental Search and Advertising Expenses. While the TAC issue has not been clearly articulated in the discovery phase of this litigation, Dr. Leonard's TAC rates appear to be more in line with historical TAC rates when Google tracked Android TAC rates separately, but I acknowledge that the burden is on Google to prove costs.<sup>59</sup>

37. As for the G&A expenses related to overhead (real estate, HR, and financial/accounting resources), it is unlikely that Google could have created Android without incurring a measurable amount of overhead costs, given the number of engineers working on the Android project. While small changes in the Android market share may not have affected the G&A expenses, large changes (i.e. Android existing or not) would almost certainly have created G&A expenses for Google. Dr. Leonard allocates a portion of Google's G&A expenses to

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<sup>57</sup> See Expert Report of Dr. Gregory K. Leonard, February 8, 2016, Exhibit 1a.1 and Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), Revised Exhibit 7.

<sup>58</sup> See Responsive Expert Report of James E. Malackowski, February 29, 2016 (Corrected), para. 64.

<sup>59</sup> Expert Report of Dr. Gregory K. Leonard, Corrected March 10, 2016, para. 13.

any advantage to Google, I would recommend a disgorgement award of \$0, and not the amounts of \$32.4 million or \$56.3 million offered by Dr. Leonard.<sup>140</sup>

103. In the event that the jury concludes the use of the 37 Java APIs was not essential to Android, but did increase the market success of Android, the apportionment task becomes more difficult. But if the jury concludes that the effect is fully measured by a decrease in market share then as noted above, the numbers range between \$2.08 billion and \$3.51 billion.

### **10.3. The 2006 Sun/Google Negotiation**

104. In the previous phase of this litigation, the damages analyses focused heavily on the licensing negotiations between Sun and Google. In this current phase of the litigation these negotiations have barely been mentioned. I understand that Oracle is not seeking as a damages remedy a lost license fee. Therefore, the amount Sun would have been willing to accept to license the subject copyrights to Google may be irrelevant. However, it is notable that the amounts of damages at play now (under some non-infringing alternative scenarios) are large relative to the amount that Sun was apparently willing to accept to license all Java intellectual property.

105. I also note that the approaches taken by the experts in this current phase of litigation are different from the first round of expert analysis made in the previous round of Oracle v. Google litigation addressed in my 2012 report. As such, this report addresses only the current approaches put forth by Dr. Leonard, Mr. Malackowski and Professor Jaffe.

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<sup>140</sup> Expert Report of Dr. Gregory K. Leonard, February 8, 2016, Exhibit 3e.

March 18, 2016

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Respectfully submitted this 21<sup>st</sup> day of March, 2016

A handwritten signature in blue ink, appearing to read 'J.R. Kearl', is written above a horizontal line.

J.R. Kearl